

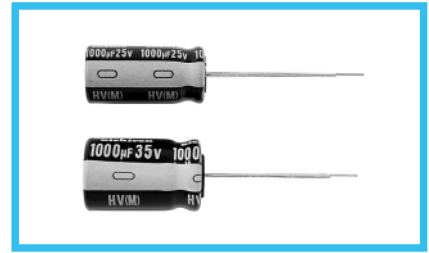
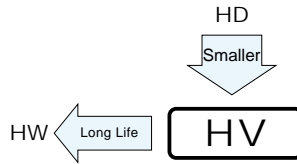
# ALUMINUM ELECTROLYTIC CAPACITORS



**HV** High Ripple Low Impedance series



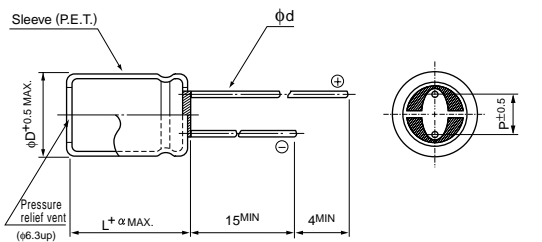
- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU).



## Specifications

Item	Performance Characteristics						
Category Temperature Range	-40 to +105°C						
Rated Voltage Range	6.3 to 35V						
Rated Capacitance Range	47 to 8200µF						
Capacitance Tolerance	±20% at 120Hz, 20°C						
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (µA), whichever is greater.						
Tangent of loss angle (tan δ)	Rated voltage (V)	6.3	10	16	25	35	120Hz 20°C
	tan δ (MAX.)	0.21	0.18	0.15	0.13	0.11	
For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF.							
Stability at Low Temperature	Rated voltage (V)	6.3	10	16	25	35	120Hz
	Impedance ratio Z-25°C / Z+20°C	2	2	2	2	2	
ZT / Z20 (MAX.)		Z-40°C / Z+20°C	3	3	3	3	3
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 6000 hours (5000 hours for φD=5 and 6.3) at 105°C, the peak voltage shall not exceed the rated voltage.						
	Capacitance change	Within ±25% of the initial capacitance value (6.3V 10V : ±30%)					
	tan δ	200% or less than the initial specified value					
Leakage current	Less than or equal to the initial specified value						
Marking	Printed with white color letter on black sleeve.						

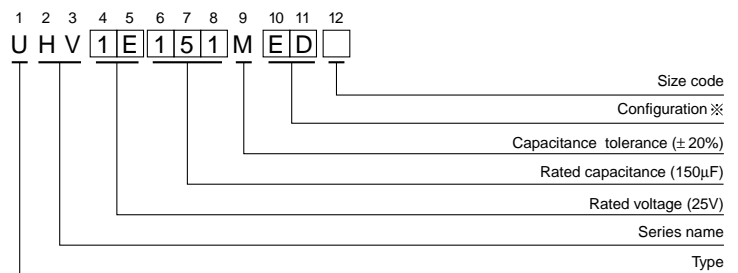
## Radial Lead Type



		(mm)					
α	(L < 20)	1.5					
	(L ≥ 20)	2.0					
φD	5	6.3	8	10	12.5	16	
P	2.0	2.5	3.5	5.0	5.0	7.5	
φd	0.5	0.5	0.6	0.6	0.6	0.8	

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φd = 0.8mm.

## Type numbering system (Example : 25V 150µF)



※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 - 10	PD
12.5 - 16	HD

● Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

## Standard Ratings

Cap. (μF)		V (Code) Item Code		6.3 (0J)			10 (1A)			16 (1C)					
				Case size φ D × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz	Case size φ D × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz	Case size φ D × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz
					20°C / 100kHz	-10°C / 100kHz			20°C / 100kHz	-10°C / 100kHz			20°C / 100kHz	-10°C / 100kHz	
100	101														
150	151						5 × 11	0.23	0.76	360	6.3 × 11	0.10	0.33	450	
220	221	5 × 11		0.23	0.76	360	6.3 × 11	0.10	0.33	450	6.3 × 11	0.10	0.33	550	
330	331	6.3 × 11		0.10	0.33	460	6.3 × 11	0.10	0.33	550	8 × 11.5	0.059	0.181	830	
470	471	6.3 × 11		0.10	0.33	550	8 × 11.5	0.059	0.181	820	8 × 11.5	0.059	0.181	990	
680	681	8 × 11.5		0.059	0.181	900	8 × 11.5	0.059	0.181	990	10 × 12.5	0.043	0.133	1360	
											▲ 8 × 15	0.046	0.143	1330	
820	821	8 × 11.5		0.059	0.181	990	10 × 12.5	0.043	0.133	1250	10 × 16	0.030	0.095	1650	
1000	102	10 × 12.5		0.043	0.133	1250	10 × 12.5	0.043	0.133	1360	10 × 16	0.030	0.095	1815	
							▲ 8 × 15	0.046	0.143	1330	▲ 8 × 20	0.031	0.105	1550	
1200	122	10 × 12.5		0.043	0.133	1360	10 × 16	0.030	0.095	1650	10 × 20	0.019	0.057	1930	
		▲ 8 × 15		0.046	0.143	1330									
1500	152	8 × 20		0.031	0.105	1550	10 × 16	0.030	0.095	1815	10 × 20	0.019	0.057	2160	
							▲ 8 × 20	0.031	0.105	1550					
1800	182	10 × 16		0.030	0.095	1815	10 × 20	0.019	0.057	2160	10 × 25	0.017	0.051	2475	
2200	222	10 × 20		0.019	0.057	2160	10 × 25	0.017	0.051	2475	12.5 × 20	0.016	0.041	2725	
2700	272	10 × 25		0.017	0.051	2475	12.5 × 20	0.016	0.041	2475	12.5 × 25	0.014	0.036	3190	
3300	332	12.5 × 20		0.016	0.041	2500	12.5 × 20	0.016	0.041	2725	12.5 × 31.5	0.012	0.031	3795	
											▲ 16 × 20	0.014	0.036	3575	
3900	392	12.5 × 20		0.016	0.041	2725	12.5 × 25	0.014	0.036	3190	12.5 × 35.5	0.011	0.029	3925	
4700	472	12.5 × 25		0.014	0.036	3190	12.5 × 31.5	0.012	0.031	3795	16 × 25	0.012	0.033	3990	
							▲ 16 × 20	0.014	0.036	3575					
5600	562	12.5 × 31.5		0.012	0.031	3795	12.5 × 35.5	0.011	0.029	3925					
6800	682	12.5 × 35.5		0.011	0.029	3925	16 × 25	0.012	0.033	3990					
		▲ 16 × 20		0.014	0.036	3575									
8200	822	16 × 25		0.012	0.033	3990									

Cap. (μF)		V (Code) Item Code		25 (1E)			35 (1V)								
				Case size φ D × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz	Case size φ D × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105°C / 100kHz				
					20°C / 100kHz	-10°C / 100kHz			20°C / 100kHz	-10°C / 100kHz					
47	470						5 × 11	0.23	0.76	360					
68	680	5 × 11		0.23	0.76	360	6.3 × 11	0.10	0.33	450					
100	101	6.3 × 11		0.10	0.33	450	6.3 × 11	0.10	0.33	550					
150	151	6.3 × 11		0.10	0.33	550	8 × 11.5	0.059	0.181	820					
220	221	8 × 11.5		0.059	0.181	810	8 × 11.5	0.059	0.181	990					
270	271	8 × 11.5		0.059	0.181	900	8 × 15	0.046	0.143	1330					
330	331	8 × 11.5		0.059	0.181	990	10 × 12.5	0.043	0.133	1360					
390	391	8 × 15		0.046	0.143	1330	8 × 20	0.031	0.105	1550					
470	471	10 × 12.5		0.043	0.133	1360	10 × 16	0.030	0.095	1815					
560	561	8 × 20		0.031	0.105	1550	10 × 20	0.019	0.057	2160					
680	681	10 × 16		0.030	0.095	1815	10 × 25	0.017	0.051	2475					
820	821	10 × 20		0.019	0.057	2160	12.5 × 20	0.016	0.041	2725					
1000	102	10 × 25		0.017	0.051	2475	12.5 × 20	0.016	0.041	2920					
1200	122	12.5 × 20		0.016	0.041	2475	12.5 × 25	0.014	0.036	3190					
1500	152	12.5 × 20		0.016	0.041	2725	12.5 × 31.5	0.012	0.031	3795					
							▲ 16 × 20	0.014	0.036	3575					
1800	182	12.5 × 25		0.014	0.036	3190	12.5 × 35.5	0.011	0.029	3925					
2200	222	12.5 × 31.5		0.012	0.031	3795	16 × 25	0.012	0.033	3990					
		▲ 16 × 20		0.014	0.036	3575									
2700	272	12.5 × 35.5		0.011	0.029	3925									
3300	332	16 × 25		0.012	0.033	3990									

▲ : In this case, [6] will be put at 12th digit of type numbering system.

### Frequency coefficient of rated ripple current

Cap. (μF)	Frequency	120Hz	1kHz	10kHz	100kHz or more
47 to 150		0.40	0.75	0.90	1.00
220 to 560		0.50	0.85	0.94	1.00
680 to 1800		0.60	0.87	0.95	1.00
2200 to 3900		0.75	0.90	0.95	1.00
4700 to 8200		0.85	0.95	0.98	1.00

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